

1995 Pollution Prevention Evaluation Report

Submitted to:

The Honorable George Allen, Governor

**The Honorable Elmo G. Cross, Jr., Chair
Senate Agriculture, Conservation and Natural Resources
Committee**

**The Honorable A. Victor Thomas, Chair
House Conservation and Natural Resources Committee**

By:

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December 1, 1995

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Executive Summary

In 1993, the Virginia General Assembly adopted pollution prevention legislation, which establishes a state policy to promote source reduction as a key environmental management option, followed in order of preference by reuse, recycling, treatment, and finally disposal. One of the primary features of the 1993 law is the requirement that the Department of Environmental Quality establish a pollution prevention technical assistance program.

The 1993 pollution prevention legislation included a requirement for the Department to submit an evaluation report to the Governor and the appropriate committees of the General Assembly each December 1, beginning in 1994 (§10.1-1425.17, *Code of Virginia*). This evaluation report is the second to be submitted by the Department and summarizes the activities of the Office of Pollution Prevention from November 1, 1994 through October 31, 1995.

The current staff of DEQ's Office of Pollution Prevention (OPP) consists of two full-time (manager and environmental engineer) and one part-time (environmental program analyst) employees. In addition, managerial and liaison support is provided by senior staff (accounting for approximately 20% of their time). Two general activities are at the core of the program: technical assistance and marketing. General funds expenditures, estimated at approximately \$125,000 per year, have been leveraged to secure federal grants. The Department has been very successful in securing federal funding. During federal fiscal year 1995, the Department received over \$350,000 from the federal government in pollution prevention grant funds.

The Office maintains an extensive library of pollution prevention materials. The pollution prevention information clearinghouse contains more than 3,000 books, articles, papers, and videos that cover all aspects of pollution prevention. As a voluntary pollution prevention technical assistance program, information dissemination and diffusion are the most valuable services available from OPP. In order to meet the demands of the diverse audiences served by the program, OPP uses a variety of information transfer techniques, primarily training, presentations and information products, including videos and a newsletter.

In 1995, OPP, in coordination with other DEQ programs, initiated the development of an interactive, Internet-based information delivery system. The system design is the product of a

cooperative multimedia agency-wide effort. Procurement is currently underway, and the first generation of the system is expected to be operational by the end of the year. In the fall of 1995, DEQ was awarded a \$180,000 federal grant under the Environmental Protection Agency's (EPA) Small Business Assistance Program Leadership Grant Program. This grant will allow the system to be enhanced and expanded to target Virginia's small businesses with multimedia pollution prevention technical assistance.

During 1995, OPP staff made more than 35 pollution prevention presentations to various audiences across Virginia. These presentations, which ranged in length from 15 to 90 minutes, addressed topics from a general pollution prevention overview to pollution prevention techniques for particular industries. Approximately 40 companies were visited by OPP technical staff for on-site assessments during 1995. The time spent conducting each assessment ranged from a half-day to more than five days.

From November, 1994, through the end of October, 1995, OPP received 525 requests for information, or approximately 2.1 per day. Requests in the forms of telephone and written inquiries fall into three general categories: requests for one or more informational products produced by OPP; questions related to pollution prevention in industry-specific settings that may require significant research, including contacting additional sources for information; and, requests for various EPA pollution prevention publications.

Coordination with other organizations that work to promote pollution prevention is a cornerstone of the Department's strategy to foster the ethic within the Commonwealth. During 1995, OPP continued to work with the state's universities and formed new partnerships with the A.L. Philpott Manufacturing Center, the Department of Economic Development's Small Business Development Centers Network and the Center for Innovative Technology.

I. Introduction

A. Report Background

In 1993, the Virginia General Assembly adopted pollution prevention legislation, which establishes a state policy to promote source reduction as a key environmental management option, followed in order of preference by reuse, recycling, treatment, and finally disposal. One of the primary features of the 1993 law is the requirement that the Department of Environmental Quality establish a pollution prevention technical assistance program.

The Office of Pollution Prevention (OPP), a non-regulatory, voluntary pollution prevention technical assistance program, was an existing program within the Department's Division of Policy and Research in 1993. In actuality, the Commonwealth's efforts to promote pollution prevention began in late 1988 with the creation of the Waste Minimization Program in the Department of Waste Management. The 1993 legislation, in calling for the establishment of a technical assistance program, added focus to the existing program.

The 1993 pollution prevention legislation included a requirement for the Department to submit an evaluation report to the Governor and the appropriate committees of the General Assembly each December 1, beginning in 1994 (§10.1-1425.17, *Code of Virginia*). This evaluation report is the second to be submitted by the Department and summarizes the activities of the Office of Pollution Prevention from November 1, 1994 through October 31, 1995.

B. Current Resources

The current staff of OPP consists of two full-time (manager and environmental engineer) and one part-time (environmental program analyst) employees. Two general activities are central to the program: technical assistance and marketing. Activities include providing telephone and written consultation, developing publications and other outreach materials, and conducting site visits to evaluate pollution prevention options.

It is difficult to assess the annual budget of the program for a variety of reasons, including that federal grant periods do not coincide with the state fiscal year cycle. General fund expenditures, estimated at approximately \$125,000 per year, have been leveraged to secure federal grants. The Department has been very successful in securing federal funding. During federal

fiscal year 1995, the Department received over \$350,000 from the federal government in pollution prevention grant funds.

II. Pollution Prevention Information Clearinghouse

The Office maintains an extensive library of pollution prevention materials. The pollution prevention information clearinghouse contains more than 3,000 books, articles, papers, and videos that cover all aspects of pollution prevention. OPP staff members regularly request copies of reports publicly available from the federal government as well as those developed by other organizations, including other state pollution prevention programs. An index of these resources is held in a database file, which contains basic information on title, source, and subject as well as notes and keyword fields that allow staff to conduct comprehensive searches for industry, government agencies and the public.

III. Pollution Prevention Information Transfer

As a voluntary pollution prevention technical assistance program, information dissemination and diffusion are the most valuable services available from OPP. In order to meet the demands of the diverse audiences served by the program, OPP uses a variety of information transfer techniques, primarily training, presentations and information products.

A. Training

During 1995, OPP has provided pollution prevention training in the forms of workshops and teleconferences.

Workshops. OPP presented two pollution prevention workshops during 1995, one for DEQ regulatory staff and one for the metal fabrication industry. In April, OPP presented four sessions of "Practical Tips for Gathering Information and Conducting Pollution Prevention Assessments" (two in Richmond and one each in Virginia Beach and Roanoke). Over 160 Department employees attended the one-day workshops, which concentrated on integrating pollution prevention concepts into regulatory functions such as inspections and permitting. Staff response to the workshop was overwhelmingly positive. Videotapes of the workshop have been made available to DEQ employees who were unable to attend one of the original workshops.

In September, OPP, in cooperation with DEQ's Small Business Assistance Program, Environmental Protection Agency (EPA) Region III and the Central Virginia Small Business Development Center, presented a workshop for metal machinists and finishers in Charlottesville. Topics covered in the one-day session included materials usage reduction, metal working fluid life extension, solvent alternatives, powder coatings and water-based paints. Twenty representatives from the industry attended the workshop. OPP's staff plans to conduct two similar workshops in cooperation with the Southwest Virginia Advanced Manufacturing Technology Center in late 1995.

Teleconferences. An important aspect of OPP training efforts has been the broadcast of national teleconferences on pollution prevention issues. The teleconferences allow Virginians to learn from national experts without having to travel great distances. Admission to all broadcasts is free, and videotapes of the teleconferences are made available by request. Marketing for the teleconferences has included newsletter announcements, press releases, and direct mailings of brochures.

During 1995, OPP sponsored one teleconference for industry and one for DEQ regulatory staff. On May 24, in cooperation with DEQ's Small Business Assistance Program, OPP presented "Clean Air Compliance for Vapor Degreasers," which was broadcast at approximately 20 sites throughout the state to an audience of more than 80. On September 27 and 28, "Pollution Prevention in Air Programs" was presented by OPP in Richmond. Approximately 12 staff from DEQ regulatory programs viewed the teleconference; videotapes of the broadcast will be made available to all six of DEQ's regional offices.

B. Presentations

During 1995, OPP staff made more than 35 pollution prevention presentations to various audiences across Virginia. The presentations, which ranged in length from 15 to 90 minutes, addressed topics from a general pollution prevention overview to pollution prevention techniques for particular industries. OPP staff has presented pollution prevention information to audiences such as commercial businesses, manufacturers, federal facilities and state agencies.

In addition to presentations, OPP has developed a table-top display that has been used at conferences and meetings, including the *Environment Virginia* symposium at Virginia Military Institute and the Annual Conference of the State Advisory Board to the Air

Pollution Control Board. The display highlights the benefits of pollution prevention and OPP services.

Examples of occasions at which OPP staff has made presentations include:

- Elizabeth River Project Conference, January 10, 1995, Norfolk, 50 participants.
- Russell County Waste Reduction Task Force Meeting, February 14, 1995, Lebanon, 20 participants.
- Municipal Wastewater Pretreatment Educational Seminar, Charlottesville, February 16, 1995, 300 attendees.
- Industrial Waste Seminar, Richmond, February 28, 1995, 120 attendees.
- Mid-Atlantic and Virginia Food Processors Annual Convention, Williamsburg, March 7, 1995, 85 attendees.
- State Advisory Board Meeting, April 21, 1995, Richmond, 25 participants.
- Solid Waste Association of North America Virginia Waste Management Conference, April 25, 1995, 50 participants.
- Virginia Toxics Release Inventory Training Workshops, Newport News (May 1), Roanoke (May 3), and Richmond (May 5), 400 participants.
- OSHA Training Seminar, Salem Civic Center, Salem, May 2, 1995, 150 participants.
- A.L. Philpott Manufacturing Center Board Meeting, Patrick Henry Community College, Martinsville, May 18, 1995, 25 board members, state legislators and Center staff.
- Presentation to Delegation of Polish Agriculture Officials, Richmond, June 12, 1995, 20 participants.
- Pepper's Ferry Wastewater Treatment Authority Pollution Prevention Workshop, Blacksburg, June 14, 1995, 35 participants.
- RCRA Waste Minimization Presentation, Richmond, June 23, 1995, 35 attendees.

- Martinsville Community Awareness and Emergency Response Meeting, Martinsville, July 12, 1995, 30 participants.
- US/European Student Delegation, Richmond, July 14, 1995, 15 students.
- State Advisory Board to the Air Pollution Control Board, Richmond, July 14, 1995, 25 board members.
- Small Business Development Centers Quarterly Meeting, Wintergreen, July 18, 1995, 35 participants.
- City of Norfolk Local Emergency Planning Committee, Norfolk, July 19, 1995, 18 members.
- Governor's Urban Policy Program, August 1, September 1 and September 22, 1995, 20 executive agency staff.
- Virginia Power Planning Advisory Committee, Richmond, September 14, 1995, 12 participants.
- Virginia Environmental Management Conference, Richmond, September 26, 1995, 100 participants.
- Recycling Industrial Technical Assistance Workshop, Dublin, September 27, 1995, 30 attendees.
- Southwest Virginia Waste Management Association Annual Meeting, Roanoke, September 28, 1995, 160 participants.
- Virginia Department of Transportation Environmental Staff Training, Blacksburg, September 28, 1995, 80 participants.
- Virginia Department of Transportation Annual Conference, Lexington, October 5, 1995, 50 participants.
- Chesapeake Bay Toxics Reduction Strategy Pollution Prevention Industrial Roundtable, Richmond, October 6, 1995, 60 participants.
- Virginia Occupational Health Association Annual Meeting, Richmond, October 6, 1995, 49 participants.
- State Advisory Board to the Air Pollution Control Board Annual Meeting, Virginia Beach, October 16, 1995, 147 participants.
- Industrial Development Authority Conference, Virginia Tech, Blacksburg, October 17, 1995, 70 participants.

C. Information Products

One of the primary ways that OPP has promoted pollution prevention is through the production, marketing and distribution of information products. These materials motivate organizations to adopt pollution prevention strategies and educate these groups on how to implement pollution prevention projects. OPP has taken a very broad approach to developing informational materials and works to tailor each item for its intended audience. For this reason, OPP has moved beyond the traditional report format to items such as factsheets, videotapes, posters and newsletters.

Videotapes. In 1995, OPP completed the production of two videotapes, "Preventive Maintenance: It's Not Just a Drop in the Bucket" and "Pollution Prevention for Textile Manufacturers." The videos, which are approximately ten to fifteen minutes in length, use music, graphics and first-hand accounts of pollution prevention successes to motivate companies to integrate pollution prevention concepts in company operations. Specific information on the benefits of pollution prevention and "how-to" guidance make the videos educational as well as motivational. Copies of both videos have been made available to Virginia industries and government agencies free of charge.

Newsletter. OPP produces a quarterly newsletter with stories that feature OPP activities and pollution prevention news of general interest; three issues have been distributed in 1995. The newsletter, entitled "Pollution Prevention Virginia," also highlights the successes of programs through its regular "Pollution Prevention Frontiers" column, which details how, why and to what extent a company, government agency or other organization has pursued pollution prevention. The newsletter is sent to over 6,000 companies, governmental officials, associations, environmental groups, media contacts, and individuals in Virginia as well as across the country and internationally.

D. Internet Information Delivery System

In 1995, OPP, in coordination with other DEQ programs, initiated the development of an interactive, Internet-based information delivery system. The system design is the product of a cooperative multimedia agency-wide effort. Procurement is currently underway, and the first generation of the system is expected to be operational by the end of 1995.

The basis of the on-line system will be a World-Wide Web server that will be accessible to most Internet users. DEQ will have a "home page" that provides users with a general overview of the

system and leads them to more detailed sources of information, through a series of additional home pages for specific agency programs (e.g., Office of Pollution Prevention, the Small Business Assistance Program, Regulatory Affairs, External Affairs) and links to other environmental on-line resources.

After accessing the system, users will be able to select options from a menu of resources, depending on the types of information the agency chooses to include. For instance, documents frequently requested under the Freedom of Information Act will be placed on the system for retrieval on demand. Similarly, regulations; announcements and required public notices; reporting forms; and other publicly available information, including factsheets, press releases and newsletters; will be made available to the public through this system.

The intended audience includes agency staff, industry, businesses and the general public, as well as other organizations that provide assistance to DEQ clients, such as the Department of Economic Development's Small Business Development Centers and consultants.

In the fall of 1995, DEQ was awarded a \$180,000 federal grant under EPA's Small Business Assistance Program Leadership Grant Program. This grant will allow the system to be enhanced and expanded to target Virginia's small businesses with multimedia pollution prevention technical assistance.

Specifically, the primary activities of the grant project will be the following: (1) develop interactive computer links to external sources of multimedia pollution prevention and environmental compliance information for small businesses; (2) formulate and post new informational materials for small businesses; (3) modify the system to allow users to post questions for DEQ staff; (4) produce and deliver training to include an interactive computer training session for DEQ staff, partner organizations, small businesses and others; and (5) develop and implement a marketing strategy to insure that small businesses, trade associations and other providers of technical assistance are aware of the system and are able to access it successfully.

OPP staff already uses the resources of the Internet on a regular basis. For instance, OPP is an active participant of three listserves related to pollution prevention (two are policy-related and the third is limited to specific technical assistance related questions). A listserve enables users with common interests to post questions via electronic mail. All questions and all answers are sent to every subscriber so that every

listserve member has the benefit of reading all correspondence. OPP has also identified a number of electronic bulletin boards and Internet sites related to pollution prevention, such as solvent substitution databases, that enhance its client service.

IV. University Outreach

In 1995, DEQ continued its efforts to promote pollution prevention within the state's universities by partnering with several institutions on specific projects. Virginia Military Institute Research Laboratories (VMIRL), with DEQ as a co-sponsor, presented the annual *Environment Virginia* symposium in April. The symposium, which focuses primarily on pollution prevention, attracts more than 450 industry, consulting and government representatives and more than 50 exhibitors. VMIRL produced a video entitled "Pollution Prevention for Localities" and an accompanying manual on pollution prevention opportunities for local governments as part of the 1995 conference. OPP staff contributed to the manual, which features chapters on office waste reduction, vehicle maintenance, building management and storm water management.

Old Dominion University (ODU) and its partner, the Hampton Roads Sanitation District (HRSD), received a \$35,000 grant in late 1995 from EPA for its proposal to sponsor engineering students to work directly with HRSD's industrial clients to identify pollution prevention opportunities. During the first year of the project, ODU and HRSD will target the marine maintenance and container printing industries. OPP assisted in the development of the proposal and will provide technical resources as the project progresses.

V. Technical Assistance

In addition to the various informational materials produced by OPP, the Office also provides facility-based technical assistance services, primarily in the form of pollution prevention opportunity assessments. In the past, these services either have been performed by OPP staff or by contractors, including both private and university-based, as secured by the Office. Although the number of assessments is limited by staff size and available contractual resources, the evaluations result in case studies that are circulated to a wide audience, thus increasing significantly the impact of each review.

A. Pollution Prevention Opportunity Assessments

The pollution prevention opportunity assessments provided by OPP offer information and advice to Virginia companies that lack pollution prevention expertise. The goals of such an evaluation are to discover ways to reduce a facility's impact on the environment while concurrently reducing costs and improving the work environment.

When requested, OPP provides customized on-site technical and research assistance. This service involves evaluating and interpreting the information that companies need to reduce waste, wastewater, and air emissions, including the identification of alternative technical solutions. For example, this year OPP staff introduced several large printing companies in the Richmond area to a cleaning procedure commonly used in the metal finishing industry, a process that may reduce the amount of waste solvent by over 60 percent. Virginia's printing industry generates over six million pounds of waste solvents annually, so implementing this more efficient cleaning technique will result in a dramatic reduction in the use of hazardous waste solvents.

Approximately 40 companies were visited by OPP technical staff during 1995. The time spent conducting each assessment ranged from a half-day to more than five days, with shorter visits usually focusing on one particular problem. During a comprehensive audit, the majority of the time in the plant is spent collecting the information and data needed to make pragmatic pollution prevention suggestions to facility management.

OPP chose the following industrial sectors for multiple facility pollution prevention technical assistance visits based on EPA's fiscal year 1995 Combustion and Waste Minimization Strategy guidance:

Printing Industry (7 facilities): Most large printing operations are installing new solvent recovery systems to lower the amounts of hazardous waste generated. More efficient cleaning equipment and the use of substitute non-toxic cleaning agents are also reducing waste solvent generation. The use of a multiple rinsing procedure for roll cleaning is an example of a source reduction method that decreases the amount of solvent needed to be recovered. New technologies such as ultrafiltration are being tested in printing operations that use water-based inks. This operation recovers printing solutions and reduces effluent discharge problems.

Metal Finishing Industry (9 facilities): There is a strong emphasis on finding less toxic substitutes for process chemicals used by this industry. Several Virginia companies have

eliminated the use of methylene chloride and 1,1,1-trichloroethane in their cleaning operations and have introduced less toxic methods such as aqueous cleaning systems. One electroplating company is phasing out the use of cyanide in its plating baths and also has installed a powder painting operation as a substitute protective coating for certain product applications. Another company will save \$200,000 annually by replacing nitric acid with a less toxic chemical.

Textile Industry (8 facilities): OPP continued to provide grant funding to wastewater specialists from Virginia Tech's College of Civil and Environmental Engineering to conduct comprehensive pollution prevention assessments at five textile manufacturing facilities in Southwest Virginia. The studies pointed out the inefficient use of water at these facilities. One company is reducing its daily water consumption by over 100,000 gallons a day by reusing non-contact cooling water that was being sent directly to the sewer, for an annual savings of more than \$100,000. Another smaller company could save over 3,000 gallons of water and the associated cleaning chemicals per day by scheduling similar product lines sequentially. New technologies such as reverse osmosis are being tested in this industry to recover raw materials and to reduce effluent discharge problems.

Chemical, Paper, and Plastic Industries (5 facilities): Companies in these industries produce many unusable by-products that presently are being disposed of as waste or which must be treated before being discharged to the environment. Again, newly-emerging technologies such as the electrochemical conversion of salts are enabling one company to install an electrodialytic process to convert useless by-products, such as sodium sulfate salts, back to useful raw materials, such as sulfuric acid and sodium hydroxide. Economics (i.e., currently low raw material costs and high capital equipment costs) will dictate how rapidly and widely this form of waste reduction, closed-loop recycling, will be implemented.

Food Processing Industry (3 facilities): Regulations often make source reduction approaches to pollution prevention a challenge in this industry. The continual drive to increase productivity may lead to poorer housekeeping practices that can result in excessive water usage with high biological oxygen demand (BOD) levels from cleaning and sanitizing operations. The challenge for food processors is to utilize practical pollution prevention options when designing new processes and modifying work procedures.

B. Responses to Research Inquiries

From November, 1994 through the end of October, 1995, OPP received 525 requests for information, or approximately 2.1 per day (based on a 250-day work cycle per year). Requests in the forms of telephone and written inquiries fall into three general categories: requests for one or more informational products produced by OPP; questions related to pollution prevention in industry-specific settings that may require significant research, including contacting additional sources for information; and, requests for various EPA pollution prevention publications. The Office maintains a database of all requests received. Response time for research requests averages five business days, while requests for other materials generally are sent within one business day.

Requests for Information Received by OPP
November 1994 - October 1995

Type of Organization	Number of Requests	Percent of Total
Business/Industry	190	36
Government	231	44
Community/Non-Profit	44	8
Educational Institutions	60	11

As summarized here, approximately four-fifths of requests have come from business/industry and local, state and federal government officials, including DEQ regulatory staff. Community and other non-profit organizations and educational institutions, such as universities and high schools, each account for approximately ten percent of all requests. These figures correlate with OPP's marketing efforts: most materials are developed and distributed for industry and government because of their relative rates of waste generation.

Using the Department's six regions, a geographic analysis of requests indicates that inquiries are received from all areas of Virginia. In 1995, the highest percentages of requests were received from the Richmond, Tidewater and Northern Virginia areas, which is understandable given the number of state agencies and industries present in these metropolitan regions.

Requests for Information Received by Department Region
November 1994 - October 1995

Region	Number of Requests	Percent of Total
1 - Abingdon	15	5
2 - Lynchburg	43	15
3 - Bridgewater	37	13
4 - Fredericksburg	59	20
5 - Richmond	71	24
6 - Chesapeake	67	23

VI. Integration of Pollution Prevention Into Departmental Regulatory Programs

DEQ recognizes the importance of integrating the concept of pollution prevention into its primary functions of permitting, inspections and enforcement. During the past year, DEQ has continued with its plans to shift as many programmatic activities as possible from the central office in Richmond to its regional offices.

OPP staff visited all six regional offices in February and March to introduce the concept of integrating pollution prevention into regulatory operations as well as the services that OPP provides to regulated sources and DEQ regulatory staff. Each of the six DEQ Regional Directors has named a pollution prevention contact, and these contacts receive regular communications from OPP on the latest developments in pollution prevention.

DEQ continues to make progress in integrating pollution prevention within its programs. A status report was presented to the Pollution Prevention Advisory Committee by senior DEQ managers on March 24, 1995. OPP regularly receives requests from regulatory staff for pollution prevention information that will be used in some type of regulatory action. For instance, an inspector from the Northern Virginia region contacted OPP to identify solvent reuse/recycling options for a county school district. This type of activity will continue to be a focus of the program in future years.

VII. Coordination with Other Organizations

Coordination with other organizations that work to promote pollution prevention is a cornerstone of the Department's strategy to foster the ethic within the Commonwealth. The Department has been charged with a broad mission by the General Assembly, to "establish a voluntary pollution prevention assistance program designed to assist all persons in promoting pollution prevention measures in the Commonwealth." In order to begin meeting that goal, it is absolutely necessary for the Department to take advantage of pollution prevention research, policies, training and informational materials developed by other organizations.

A. State Pollution Prevention Roundtable Organizations

OPP is an active participant in two state roundtables: the EPA Region III Pollution Prevention Roundtable and the National Pollution Prevention Roundtable. Meetings of the EPA Region III Roundtable, held in the summer and winter, provide the five states and the District of Columbia within EPA Region III opportunities to exchange information among themselves and with EPA. The National Pollution Prevention Roundtable sponsors two conferences per year, held in the spring and fall, that feature presentations and discussions by national pollution prevention leaders from government, industry and non-governmental organizations.

B. Chesapeake Bay Pollution Prevention Program

In January 1989, the Chesapeake Executive Council adopted the Chesapeake Bay Basinwide Toxics Reduction Strategy as part of its commitment to the Bay in the 1987 Chesapeake Bay Agreement, the guiding document of the Chesapeake Bay restoration effort. The Executive Council, which consists of the Governors of Virginia, Maryland, and Pennsylvania; the Mayor of the District of Columbia; the EPA Administrator; and the Chairman of the Chesapeake Bay Commission, reevaluated the strategy starting in 1992 to define better the nature, extent and degree of toxic pollution. The result was the Chesapeake Bay Basinwide Toxics Reduction and Prevention Strategy, a series of implementation plans, policies and strategies that address the environmental and resource management issues involving the Bay.

In the strategy, pollution prevention is embraced as one of the main components for improving conditions in the Bay. Specifically, the Executive Council has made it a primary objective to promote pollution prevention technical assistance and educational programs at the federal, state and local government levels throughout the watershed. The signatories recognize that pollution is generated by a wide range of sources,

including federal facilities, local and state governments, industrial facilities and households. As a result the Executive Council has committed to a variety of ambitious programs and targets to enhance the Bay, including reductions in toxic releases from industry and federal facilities.

OPP has worked closely with DEQ's Chesapeake Bay Program staff, staff from EPA's Chesapeake Bay Program office, and representatives from other states and industry, to craft a voluntary pollution prevention program that will encourage the groups targeted by the strategy to adopt pollution prevention principles. The proposed program will offer recognition and flexibility to those that elect to participate.

On October 6, 1995, approximately 45 representatives from Virginia's manufacturing sector participated in an industry roundtable to evaluate a "Chesapeake Bay Pollution Prevention Program" proposal. A similar roundtable was held in Maryland, and one is scheduled for late 1995 in Pennsylvania. A final draft of the Chesapeake Bay Pollution Prevention Program, based on comments from these industry roundtables, will be presented to the Executive Council in late 1995. Implementation of the program, which will be conducted largely by OPP and its counterparts in the other affected states, will begin in 1996.

C. Virginia State Agency Pollution Prevention Planning

House Joint Resolution 453, which requests all agencies of the Commonwealth to engage in pollution prevention planning, was adopted by the 1995 General Assembly. In adopting the resolution, the legislature recognized that there "are significant opportunities for state agencies to reduce or prevent pollution at the source through cost-effective operation and raw material use." In addition, the resolution states that several agencies, including the Department of Motor Vehicles, Virginia Correctional Enterprises and the Department of Transportation, already have realized significant cost savings and other benefits from their pollution prevention efforts.

As the Commonwealth's lead agency for pollution prevention efforts, DEQ is requested by the resolution to complete three specific tasks related to providing direction and guidance to other state agencies:

- (1) By January 1, 1996, establish criteria for use by state agencies to determine whether minimal amounts of toxic or hazardous substances are generated as wastes or released into the environment as pollutants.

- (2) By January 1, 1996, develop criteria to be used by agencies in creating pollution prevention plans.
- (3) Establish schedule for filing of agency pollution prevention plans.

In the summer of 1995, OPP developed a discussion paper outlining its proposed course of action related to these three tasks and presented it to the Pollution Prevention Advisory Committee, by whose membership it was endorsed. In summary, DEQ has elected to do the following:

- DEQ will use standard pollution prevention planning guidance developed by the EPA as the basis for its planning initiative.
- DEQ will provide technical assistance to affected state agencies as requested, including training workshops, on-site assessments and research.
- The proposed schedule for the filing of agency pollution prevention plans with DEQ is expected to be phased in over three years (i.e., year one: training; year two: plan development; year three: plan implementation).

D. Economic Development Agencies

In 1995, OPP formed partnerships with several key Virginia economic development agencies to take advantage of federal grant opportunities open to agencies other than DEQ. In April, Virginia was awarded one of three federal grants nationwide by the Small Business Administration. The Department of Economic Development's Small Business Development Centers (SBDCs) Network received \$150,000 to integrate pollution prevention into the services of its 21 centers throughout the state. DEQ was one of a number of state agencies that contributed to the grant proposal and has pledged to serve as a technical resource for the project.

Two pollution prevention specialists have been hired under the grant, one to serve the eastern part of Virginia and one to serve the western area of the state. Five industrial sectors have been targeted for business planning and pollution prevention technical assistance: vehicle maintenance, metal fabrication, textiles, wood furniture and printing. OPP staff will work closely with the two pollution prevention specialists to sponsor workshops and develop informational materials for these industries.

Similar to the SBDC project, the A.L. Philpott Manufacturing Center (PMC), located in Martinsville, received a multi-year

\$277,000 grant from the National Institute of Standards and Technology in 1995 to integrate pollution prevention concepts into the Center's manufacturing extension services. PMC, which serves small to medium-sized manufacturers in southside Virginia, is in the process of hiring a pollution prevention specialist who will be responsible for a number of outreach activities, including on-site technical assistance and training. DEQ has pledged to be an active participant in the project, which will include challenge grants and a retired professionals program.

VIII. Virginia Pollution Prevention Advisory Committee

As authorized by legislation adopted by the General Assembly, in 1994 the Department created the Virginia Pollution Prevention Advisory Committee, a 23-member panel that consists of representatives from industry, education, environmental and public interest groups, as well as local, state and federal government organizations (a membership list is included as Appendix A).

The advisory committee meets on an as-needed basis. During the past year, the advisory committee has met three times. At its November 15, 1994 meeting, the committee heard reports from the State Advisory Board to the Air Pollution Control Board on their pollution prevention study and from DEQ staff on the Chesapeake Bay Toxics Reduction and Prevention Strategy.

Senior DEQ managers reported on the progress made toward integrating pollution prevention into regulatory programs at the advisory committee's March 24, 1995 meeting. In addition, the committee heard about the Department of Economic Development's efforts to integrate pollution prevention into its Small Business Development Centers Network. The focus of the July 21, 1995 advisory committee meeting was the pollution prevention efforts of Virginia's state agencies in light of HJR 453 (discussed previously), adopted by the 1995 General Assembly, which requests state agencies to develop pollution prevention plans. Copies of advisory committee meeting agendas and summaries are included as Appendix B.

IX. Conclusion

During 1995, DEQ has continued to provide leadership in pollution prevention within the Commonwealth. While continuing its mission to promote voluntary pollution prevention efforts in all arenas, the Department also has partnered with other organizations to

expand the network of pollution prevention technical assistance within Virginia. OPP has maintained its efforts in the program's traditional areas of training and on-site technical assistance. At the same time, OPP, in cooperation with other DEQ programs, has made a commitment to reaching its audience via the Internet. Through these efforts, DEQ continues to strive toward accomplishing its primary goal of prevention pollution in the Commonwealth.

Appendix A
Pollution Prevention Advisory Committee

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Appendix B
Virginia Pollution Prevention Advisory Committee
Meeting Agendas and Summaries

[insert agendas and meeting summaries]